



Harold Fern Foundation
Quarterly



Spring 2014

THE HARDY FERN FOUNDATION

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The Hardy Fern Foundation was founded in 1989 to establish a comprehensive collection of the world's hardy ferns for display, testing, evaluation, public education and introduction to the gardening and horticultural community. Many rare and unusual species, hybrids and varieties are being propagated from spores and tested in selected environments for their different degrees of hardiness and ornamental garden value.

The primary fern display and test garden is located at, and in conjunction with, The Rhododendron Species Botanical Garden at the Weyerhaeuser Corporate Headquarters, in Federal Way, Washington.

Affiliate fern gardens are at the Bainbridge Island Library, Bainbridge Island, Washington; Bellevue Botanical Garden, Bellevue, Washington; Birmingham Botanical Gardens, Birmingham, Alabama; Coastal Maine Botanical Garden, Boothbay, Maine; Dallas Arboretum, Dallas, Texas; Denver Botanic Gardens, Denver, Colorado; Georgia Perimeter College Garden, Decatur, Georgia; Inniswood Metro Gardens, Columbus, Ohio; Lakewold, Tacoma, Washington; Lotusland, Santa Barbara, California; Rotary Gardens, Janesville, Wisconsin; Strybing Arboretum, San Francisco, California; University of California Berkeley Botanical Garden, Berkeley, California; and Whitehall Historic Home and Garden, Louisville, Kentucky.

Hardy Fern Foundation members participate in a spore exchange, receive a quarterly newsletter and have first access to ferns as they are ready for distribution.

Cover design by Willanna Bradner

HARDY FERN FOUNDATION QUARTERLY

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University of Maine Cooperative Extension Service

President's Message ~ Spring, 2014

The ferns are beginning to awaken from their winter slumber in this first week of spring, led by the tenacious, cold tolerant and widely proliferating Ostrich Fern, *Matteuccia struthiopteris* (featured in this issue.) The half unfurled fronds already stand a foot tall. Now is definitely the time to curtail their unrelenting spread. Another early riser, *Polystichum neolobatum*, is beginning to display its limp and shaggy unfurling crosiers, which put on a show as they morph into shiny green, erect, lanceolate fronds. The thin, purplish black wiry crosiers of *Adiantum aleuticum* are just beginning to uncoil, peeking through the organic duff of the woodland garden.

As the seasons change, so it is with the Hardy Fern Foundation. Jo Laskowski, HFF's longtime Assistant Curator will take over the reins as Curator. Michelle Bundy, our immediate past Curator, has taken a position with Casa Flora of Dallas, Texas and will represent the company in this region as well as elsewhere. We are very fortunate that Michelle will remain employed on a part time basis with HFF, which will greatly assist in this curatorial transition and in the operation of the organization. Michelle will also continue to serve on the board. A big Congratulations and Thank You go to Jo, as she takes over the lead role for the Foundation. I wish her the best. May your role grow and unfurl as your favorite fern. Michelle Bundy has been the face of HFF in the PNW for the past 16 years. A special Thank You goes to Michelle for leading and guiding the HFF these many years. Her service and dedication has been instrumental in making HFF a better and wider reaching organization. HFF is more recognizable in the Horticultural Community than ever before. I wish her the best in her new position with Casa Flora and am grateful for her continued involvement with HFF.

The HFF educational booth at the Northwest Flower & Garden Show in Seattle, WA this past February was really wonderful. A beautiful long banner commemorating HFF's 25th anniversary graced the back wall of the double booth. The design of the booth steered visitors within the booth to observe numerous ferns in raised planters and to educational boards and placards that depicted ferns and fern culture, and the endeavors of the Foundation. One uniquely designed roll up display highlighted members benefits. The educational board mounted with numerous fern specimens and observed through mounted magnifying plates really drew interest. Numerous flyers on fern culture and HFF events were available as always. Very nicely done. Thank You Jo, Michelle and Richie for your ingenuity and thought in putting this very beautiful display together.

HFF's next endeavor is the annual Fern Fest which will be held as always on the first weekend of June at the Center of Urban Horticulture at the University of WA in Seattle. The board and staff always give a herculean effort in making this event one of the largest fern sales in the country. Special effort is given to offer as wide a selection of ferns to the general public as possible. This event is HFF's largest fundraiser for the year and provides a wonderful experience to bump shoulders with fellow fern enthusiasts and share information, stories and experiences on the culture of growing ferns. This year Fern Fest will be held on Friday, June 6th from noon to 6:30 pm followed by the

HFF annual meeting at 6:30. The lecture “Ferns of the Caribbean” by Carlos Sanchez will be at 7:00 pm. Dr. Sanchez is a professor of botany at the University of Cuba in Havana. He is also a research scientist at the National Botanica in Havana. He will contrast similar fern genera between his country and the Northwest as well as discuss conservation efforts in Cuba. I look forward to a very interesting and informative lecture. The plant sale continues on Saturday, June 7, from 9:00 am to 2 pm. The sale also offers a large assortment of other unique, shade loving plants. Please tell your friends and fellow fern enthusiasts, and come and join in the fun and pick up some unique ferns for your garden.

There will be some special events in commemoration of the 25th anniversary of HFF held during the course of the year. On June 18th HFF Vice-President Richie Steffen will give a talk and walk on the Ferns of the Miller Garden. Richie is the Curator of the acclaimed Elisabeth Miller Botanical Garden in Seattle. Richie is well known as a most entertaining speaker and his botanical knowledge is immense and shared with enthusiasm. Look forward to a most delightful day. Other lectures and events will follow through the year. Information will be available on the HFF website.

The wet and cool weather of the past couple of months seems to have extended this past winter. I anxiously await some sixty degree days so that spring takes off. But rhododendron, witch hazel and camellia are in bloom. Hellebores are ever more present in their numerous color forms, and the witch hazels are finished with their bloom. Ferns have been trimmed and I impatiently await their unfurling, something I appreciate more with each passing year.

Happy Fern Gardening, John van den Meerendonk

From the Editor –

Spring brings welcome cheer to us all and for many the unfurling fronds and trillium blossoms are amongst the joyful symbols of the season. So it is with pleasure that we feature these in this issue. *Matteuccia* was highlighted back in the Newsletter of 1995 and while things have changed, their appeal and special (edible) status has not. I’m pleased to be able to present the comprehensive 1995 account written by James Horrocks, who so faithfully has provided our readers with an insightful and informative fern species portrait for all these years. It comes with our sincere thanks to you Jim and best wishes for continued good reading for our members.

The 1995 issue with its focus on *Matteuccia* also included some wonderful observations from members. While I can’t include them in entirety here the following excerpts were enjoyed at the time and I’m happy to reprint them to be appreciated once again.

From the late Renee G. Hill of Bellevue, WA – ...”The Alaska Relative....Many years ago, as a child growing up in what was then the very small coastal town of Juneau, Alaska, fiddlehead ferns were a treasured spring delicacy. After a long winter with few

fresh edibles, their distinctive flavor and wildness brought a much needed awakening. I well remember being loaded with a small bucket and trudging out the door to garner fiddlehead ferns. In those halcyon days, it was simply a matter of a few feet to nature.... ours was the last house on the hill at the edge of ‘town’ which stopped there on the foothills of one of the lesser mountains.....tho growth in the capital city has been spectacular....I wonder if the fiddleheads are still ‘safe’ for the picking?

The Alaska of my youth was quite primitive, with food and supplies arriving by small coastal boats with limited amenities. Meats were frozen, vegetables of the long-keeping varieties, with perhaps an occasional cabbage.....

The fiddlehead is not forgotten, however.....a very successful restaurant in Juneau bears its name, and fiddleheads are a featured specialty on their menu.”

And from Catherine Guiles of New Gloucester, ME.....

“Around Mother’s Day this year, as in every year in my part of the country, strange things start to happen. Early in the morning, near the loading dock of a large supermarket, where one, perhaps two, 18 wheelers are disgorging pallet-loads of canned goods and provisions, someone pulls up in a beat-up pickup truck and, hoisting a bulging potato sack, heads for the produce department. After some dickering, the manager takes possession of the sack’s contents, and the truck driver is off, perhaps to the nearest mom and pop store for a cup of coffee.

On the same day someone delivers a five-gallon bucket to the kitchen door of a restaurant. Again, some dickering and the seller, pocketing his cash and swinging the empty container, is off...**What’s going on here?** It’s fiddlehead time in Maine...and throughout New England and Atlantic Canada! The fiddleheads of the ostrich fern (*Matteuccia struthiopteris*) are a wonderful, seasonal delicacy, and the activities of harvesting them getting them to market and preparing them for the table coincide with the true beginning of spring....” So how do we use, cook and eat them...? See the accompanying brochure information on page 32, published by the Maine extension service and enjoy!!

Welcome New Members!

Craig Andrews	Benjamin Meersman	Karen Reese
Julie Aukstkalnis	Lucy Melara	Carol Ross
Susan Burandt	Krista Peterson	Steve Thompson
Steve Herridge	Terry Ramborger	Mary K Tomas
Linda Kalayan	James Reding	Linda Wells
Blanca Leon	Julian Reed	Nancy Wilcox
		Kathrin Young

Matteuccia struthiopteris

Ostrich Fern

James Horrocks ~ Salt Lake City, UT

Originally, this fern was named *Osmunda struthiopteris* by Linnaeus in 1753. In 1818 it was assigned to the genus *Pteretis* (species *nodulosa*) which has been rather widely used even up until recent years. In 1866, Todaro gave it the name *Matteuccia* in honor of an Italian naturalist and that name is now accepted. The species name *struthiopteris* literally means “ostrich fern”, very descriptive for the outline of the fronds. The genus *Matteuccia* seems to be only vaguely related to other groups, in fact, its relationship to other taxa is merely presumed for the most part.



Matteuccia struthiopteris

Photo courtesy of Sue Olsen

There are three recognized species of *Matteuccia* and possibly a fourth (Rush) all native to the temperate parts of the northern hemisphere. These include: *Matteuccia intermedia* from China, which is perhaps not strikingly different from *M. struthiopteris*, *Matteuccia orientalis* from Japan, Korea, China and the Himalayas, with smaller, more drooping sterile fronds, and finally *Matteuccia struthiopteris* which is found in North America, Europe and in eastern Asia. Lellinger mentions that according to Morton (1950) the American variety differs from the European form in having concolorous, rather than bicolorous scales with a black central stripe. The American variant is usually designated as *Matteuccia struthiopteris* var. *pensylvanica*, but it should be mentioned that even with this group there can be found subtle differences, depending on what part of the country they come from. The ostrich fern may be confused with the cinnamon fern *Osmunda cinnamomea* (...now *Osmundastrum cinnamomeum*...ed.), but the most obvious difference lies in the outline of the frond, which is like that of an ostrich plume in the ostrich fern.

The range of the American ostrich fern is from Newfoundland across Canada to British Columbia and north to Alaska, south to Northern Missouri and across to Maryland and the Virginias. It does not occur naturally in the western United States and becomes rare south of Latitude 41°. It is found growing in swamps, river bottoms, alluvial flats and thickets, and on moist wooded slopes. It is among the tallest North American ferns. The author encountered a magnificent stand just outside Montreal, Canada in a swampy area, the enormous fronds being fully eight feet in height.

Description: The rhizomes are dimorphic (Lellinger) with long-creeping, horizontal portions that form at intervals and very stout erect crowns that produce a large vase-shaped cluster of fronds. The stipe bases are clothed with lanceolate pale brown scales. The fronds are strongly dimorphic. The large deciduous sterile fronds, which appear

first, are pinnate-pinnatifid and deeply cut into scythe-shaped segments. The fronds can be from two to seven or even eight feet high, depending on habitat, and from 6 inches to as much as 20 inches across. The frond apex is obtuse, that is, rather rounded like an ostrich feather. Fertile fronds appear later in the summer and are much shorter than their sterile counterparts. Their stipes are nearly equal in length with the blade, crescent-shaped in cross-section and shiny brown. The fertile blade is from 6 to 12 inches in height and from one to three inches wide, the green color turning dark brown with crowded, thick under rolled pinnae which resemble segmented worms. The sori are on rather long receptacles which are at right angles to the abaxial surface of the fertile segments. The spore cases are like two tiny gun-barrels (Clute) one on each side of the midvein. There is no indusium. The dark brown spores are retained all winter, and then released the following spring.

Culture: Without question, this is one of the most adaptable ferns in cultivation. It is an attractive subject for a large garden and is quite impressive when allowed to grow in large colonies. However, in a smaller garden, it can become a nuisance, its spreading habit choking out more delicate species. It reflects its care and as has been noted, can reach a truly enormous size in swampy acid conditions, although it is more often at home in moist circumneutral soils. In climates that are less humid to semi-arid, the ostrich fern holds its own, although by August it tends to look rather dilapidated if the summers have been hot and dry. It is certainly not as sturdy as, for example, the male fern, *Dryopteris filix-mas*. The fiddleheads of the ostrich fern are the most commonly eaten ferns in North America and are said to taste rather like asparagus. If there is ample room in the garden, this is a rather interesting and, to say the least, vigorous fern, the flushes of new fronds being quite attractive.

References:

- The Fern Guide* (1961), Edgar T. Wherry, University of Pennsylvania, Philadelphia
- Field Book of Common Ferns* (1928), Herbert Durand, G.P. Putnam Sons, New York
- A Field Manual of the Ferns and Fern Allies of the United States and Canada*
- David B. Lellinger, Smithsonian Institution Press, Washington, D.C.
- Encyclopaedia of Ferns*, David L. Jones, Timber Press, Portland, OR
- A Guide to Hardy Ferns*, Richard Rush, British Pteridological Society, London

Article Reprinted from the Hardy Fern Foundation Newsletter Volume 5, Number 2, Spring 1995.

“PTERIDOTRIVIA”

What country is thinking about putting an image of a fern on their national flag?

Visit our website, www.hardyferns.org for the answer!

Trilliums & Plant Collecting: Embracing Your Obsessive Side, why obsession can be a good thing

Susie Egan ~ Woodinville, WA

Plant collecting can be considered an obsession, albeit in my opinion, a really pleasurable one. Some think obsessions are negative, as when associated with compulsive or unwanted thoughts and emotions. But obsessions can actually be positive and enjoyable.

It's fun to collect things you love. In the case of plant collecting, it gives the collector a chance to enjoy something they love over and over again by simply taking a walk through their garden.

Likewise, many people who love ferns, love to collect as many as they can to grow in their gardens. And chances are, if you're reading this article, you may be one of those people. Collecting ferns can satisfy a need to capture, arrange and organize a bit of the natural world in your own private garden. During the Victorian era, fern collecting reached fever pitch. British novelist, Charles Kingsley, called the craze "pteridomania", a clever combination of the words *Pteridophytes* and *mania* to mean *Fern Madness* or *Fern Craze*.

I'm a lover of ferns for sure and have been collecting them myself for over twenty years. But about seven years ago I became crazed by another plant, not that I needed yet another obsession. In fact, this new plant makes a lovely companion plant to my fern collection not only because they complement one another but because they also share the same general woodland conditions. Plus compared to the 12,000 species of ferns, this new genus only had roughly fifty species and so it was conceivable that I could actually collect them all!

So what is this wonderful plant that has now consumed my thoughts almost every waking hour of every day? What is this lovely living thing that has captured my heart and those of many more around the world? Why it's none other than -- the trillium, that sweet little woodland gem whose exquisite yet fleeting beauty returns every spring bringing joy, hope and excitement as most plants reawake from their winter slumber.

Oh "*How do I love thee [little trillium], let me count the ways.*"

The truth is there are actually others out there who share my obsession for trilliums. We have several "common names", one being a *trilaholic*. But I prefer the more refined specific epithet, *Trillium enthusiast*. We do have "TA" meetings available to help us deal with our affliction and in this time of modern technology we call them trillium internet forums, trillium Facebook pages, trillium email, even Trillium Twitter -- yes we actually Tweet Trilliums!

Ferns and trilliums go hand-in-hand with one another, or I should say go "frond-in-leaf"? After all they both like it on the shady side, enjoying the deep mysterious shadows of the forest. They like it moist too; well who wouldn't? And they don't try to outshine or out compete one another. In fact they quite simply enjoy one another's company with the ferns graciously providing a beautiful delicate, lacey background for their trillium allies. The ferns stand aside graciously allowing the trilliums to show off their colorful flowers in colors of white, yellows, greens, pink, red, brown, and even bi-colors. They are spring

ephemerals, only blooming for a short period of time in the early spring before bowing down in summer for the ferns to continue on without them. What a beautiful and natural comingling and mutual adoration. I so love them both.

So now with my two growing plant obsessions, I mean collections, I had the perfect reason to create a magical fairytale woods on our property. After all, my ferns and trilliums needed a special place to be free to grow and propagate to their hearts content. We call their little piece of paradise, Cottage Lake Gardens, snugly nestled on two wooded acres on the eastern shore of Cottage Lake, Washington. Majestic douglas firs and western red cedars provide a high shade canopy with an understory of native vine maples. Nature trails meander through the forest leading down to the lake, under planted with loads of deciduous and evergreen huckleberries, Indian plum, wild roses, Oregon grape, salal and of course, our native sword ferns.

Interestingly, there were no trilliums here twenty years ago when we first bought the property. However, we have since learned that they were here years earlier; who knows what happened to them. Thankfully this is no longer the case, as Cottage Lake Gardens is now home to every species of trilliums known to exist in the world. How wonderful is that? And what a sight to behold! This is why obsessions can be a good thing. A purposeful but natural assemblage of trillium species living in combination with a vast and varied fern collection in one location not only allows me to enjoy seeing what I love so dearly over and over again every spring but I can share these wonders of nature with others as well. Life is good.



Trillium sulcatum with dark ovary.

Photo courtesy of Susie Egan

So what is it that draws me to trilliums? I've often wondered that myself. I discovered through my research that trilliums first arose around the Appalachian Mountains millions of years ago. Maybe my Cherokee Indian ancestral genes draw me to them as they were certainly native wildflowers in the woods where my family was from. Perhaps

it is because they are so unusual, rare and have such an understated, elegant beauty. Unfortunately they are becoming more and more endangered with their native habitats shrinking and so my heart yearns to protect them and propagate them to keep them from extinction.

From their birthplace in the Appalachians, they migrated very slowly, seed by seed, westward all the way to the Pacific Ocean and at the same time, northward up through Canada, eventually moving across the Bering Strait into Northeast Asia before the Pacific Ocean closed the gate behind them.



Garden Angel

Photo courtesy of Susie Egan

They created new species of themselves as they made their long journey. Much later, the Rocky Mountains were formed, blocking the eastward blowing rains causing the trilliums in the center of the continent to eventually die out. Today trillium populations remain in the northern, eastern and western parts of North America as well as that little isolated pocket in northeast Asia. They never made it on their own to any other continents -- not South America, Africa, Europe nor Australia; although they were later imported to those places by plant collectors.



Trillium grandiflorum
'Snowbunting'

Photo courtesy of Susie Egan

The most famous trillium of all and native to the northeastern United States is the white *Trillium grandiflorum*. It resembles a lovely white lily whose petals splay outward showing off its bright yellow anthers. It is the provincial flower of Ontario, Canada and the state wildflower of Ohio and appears on many China patterns and on way too many Canadian souvenir spoons. And as with all trilliums it is recognizable because of its unique three flower petals. In fact many of the trilliums' parts come in threes (three leaves, three stigma and a three-chambered ovary.) *T. grandiflorum*, along with half of the trillium species, has a *pedicellate* flower (having a flower stem) while the others have a *sessile* type flower with no stem and the flower sits directly on the leaves. (See photo page 27)

The west coast version of *T. grandiflorum* is *T. ovatum*. (See photo page 26) In fact it looks so similar to her eastern cousin, that usually only trillium experts can tell them apart. And *T. camschatcense* is their similar looking Asian cousin.

And then there are the gorgeous eastern red ladies (all pedicellate): *T. erectum*, *T. sulcatum* (See photo left page) and *T. vaseyi*. The sassy sessile reds tend to be more mahogany colored and their stemless flowers look different, more V-shaped, never fully opening. Most sessile type trilliums also have the most colorful mottled leaves almost looking like camouflage, while most pedicellates have solid green leaves.

Oh and I haven't mentioned the yellows (*T. luteum*), (See photo page 26) the pinks (*T. catesbaei*, some *T. chloropetalum*, and *T. grandiflorum roseum*) and the double whites (*T. grandiflorum* 'Snow Bunting'). (photo above) But the holy grail of trilliums and the one most coveted by trillium enthusiasts is the *T. undulatum* also known as the Painted Trillium. It's the only bi-colored trillium with solid white petals and a unique red triangle in the center. It is, of course, the most difficult trillium to grow.

Because trilliums have become scarcer with some species now threatened, efforts are being made to protect them from being picked or dug from the wild. (continued on page 28)



**Susie Egan enjoying her
wonderland of trilliums!**

Photo courtesy of Susie Egan



Trillium ovatum

Photo left courtesy of
Susie Egan

Trillium cuneatum

Photo right courtesy of
Susie Egan



Trillium luteum

Photo left courtesy of
Susie Egan

Ferns at Cottage Lake Gardens

Photo right courtesy of
Susie Egan





**Mottled leaves of
sessile trillium**

Photo left courtesy of
Susie Egan

***Trillium stamineum*
propeller trillium**

Photo right courtesy of
Susie Egan



**“Fiddleheads” at the
Olbrich Botanical Garden**

Photo left courtesy of
Jeff Epping

Trillium simile

Photo right courtesy of
Susie Egan



Many wild populations have disappeared never to return. In addition, very few nurseries grow trilliums because it can take seven years for them to flower from seed and they cannot afford to grow a plant on for that long and still realize a profit. So that only leaves trillium lovers like myself to grow them as a true labor of love.

So when you think about your lovely fern collection, think about including some trilliums to keep them company. You don't have to be obsessive about it, but even if you are, that's not such a bad thing after all.

Susie Egan is a longtime member of HFF and currently serves on the board. She and her husband, Kevin, own Cottage Lake Gardens, a two-acre private botanical garden in Woodinville, Washington. Every year they host dozens of garden tours including the popular Trillium Tea, Talk and Tours. Susie is in the process of establishing a National Trillium Collection at Cottage Lake Gardens whose purpose will be to conserve, grow, propagate, and make available many species of trilliums previously unavailable to the public.

Elsewhere with Friends and Relatives

***Matteuccia orientalis*, Oriental ostrich fern**

Sue Olsen ~ Bellevue, WA

This is a shorter note on a shorter plant. As implied this is an Asian counterpart to our native species and grows in acidic woodlands from Russia, Korea, Japan and China to the Himalayas. Accounts vary but it usually matures at two feet or somewhat higher and while not as likely to rapidly take over the garden does spread - gradually by ostrich standards. From a botanical as well a visual standpoint *Matteuccia struthiopteris* fronds are dressed to the ground with foliage whereas *M. orientalis* differs by having stipes that are up to one half the height of the frond. Both are deciduous and both offer upright fertile fronds that winter over as brown spikes releasing their spores in the spring. I have mine safely and happily nestled in a container and it dropped copious amounts of spore in mid-March. I have shared these with spore exchanges (the HFF and AFS spore exchanges were willing to give them a try so adventurous members can order from either).

Please, please do not consider this an edible. The web strongly cautions against it listing it as "famine food used when all else fails". Enjoy it for its beauty instead.

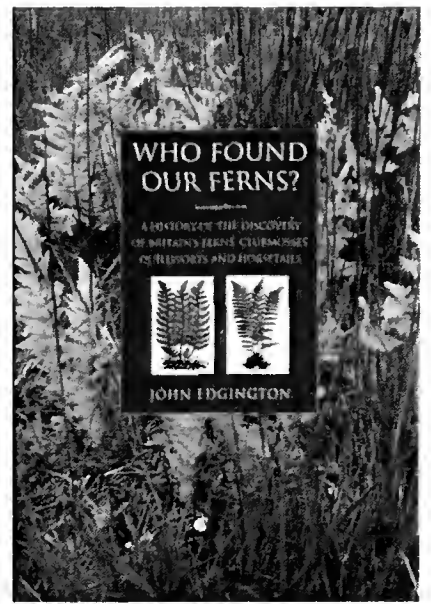
MATTEUCCIA STRUTHIOPTERIS VAR. *STRUTHIOPTEREIS* is one for the splitters. It is the European native and is described as having persistent stipe scales that are a dark centered brown. Our American var. classified as *pennsylvanica* by contrast it taller and has non-persistent plain brown scales on the spring new growth. Be sure to check!

MATTEUCCIA STRUTHIOPTERIS "THE KING" (Jumbo) is an enormous version of an already "large" fern. The plants are bigger in every way with striking fronds that can reach eight feet and fertile fronds at least 50% taller than those on the type species. Yes, this is a conversation piece and that is an understatement.

Who Found Our Ferns?

John Edgington. 2013. British Pteridological Society Special Publication No. 12 ISBN 978-0-9926120-1-6, 216pp. 245 × 170mm.

Pat Acock ~ Kent, UK



This is a most beautifully designed, illustrated and researched book that does exactly what it says in the title. Although it also contains those plants traditionally linked to ferns under the umbrella Pteridophytes now usually named Lycophytes.

The book is a superb value and is lavishly illustrated throughout in colour excepting where original black and white plates are used. Pictures include very early depictions of ferns, the best plates from nineteenth century fern books as well as coloured photographs of the ferns in their natural settings all lavishly set in a very aesthetically pleasing and appropriately designed layout.

The research into ancient texts is extensive and having done a little myself know how tenacious one must be in working back through time, when trails often run cold. It is clear from the nature of the literature that has been looked through, a large proportion of which predates Linnaeus. that the author has had to visit many of the best libraries in Britain to track down and check across a number of different editions of books. I can vouch for the accuracy of the references for *Dryopteris* and *Equisetum* since I have done this research myself recently. I have no doubt in my mind that the author has been just as diligent throughout all his research.

After a chapter on the earliest history of recognition of the ferns in Britain the remaining chapters are arranged in order of the main fern families as we presently understand them. The ferns are covered individually apart from a few whose history was confused in the past. Each fern in the family is dealt within genera order. It is headed by current name, author and the reference to that authority. This is followed by the first acknowledgement of the individual fern along with other interesting records around the same period. These are then cross referenced to Linnaeus or other leading authorities writing on ferns such as John Ray. The text is elegantly arranged around classic illustrations of the species, the earliest drawings, nineteenth century pictures, herbarium sheet copies or photographs of the fern in its habitat.

Besides the main bulk of the text there are two very useful appendices. The first named Earliest Reports of British Ferns gives author, date and report for each fern of a few of the next early records which makes it easy to access more information. The second appendix Linnaean binomials and Latin Phrase names gives quick access when reading older texts of synonyms and pre Linnaean names. The bibliography in itself will help many researchers to see the wealth of literature needed for this type work and help them in accessing it.

I am sure this book will find great merit at a number of levels in the fern fraternity and has two great merits. Firstly it is so interestingly written that people will pick it up from

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time to time just to remind themselves of the history of a fern they have just seen, grown, are writing or reading about to discover more about it.

Secondly the book will become a reference source for years to come for people writing papers, books and especially county or state floras knowing that they can rely on the research in it. They will no longer have to do the spade work to find the information they need since the work has been done for them and is altogether in one place. So often finding a start tracking names or synonymy only means one is only at the start of a very long and time consuming trail which is fine and fun if you have the time but who needs to re-invent the wheel.

Whilst the book was initially written for a British/European readership over $\frac{2}{3}$ of the ferns occur in North America and with the large number of European ferns and their cultivars being popular with American fern growers, this book I feel will find a wide group of American fern lovers purchasing a copy probably when they come across a copy in a friend's collection. I can thoroughly recommend this book and that is not because I am selling it on behalf of the society and need the space in my loft! Please do not think from what you have just read about this book it is not for me. Check it for yourself but be sure to buy a copy before they run out since this type of book rarely goes for a second print.

To order contact Pat Acock at: 13 Star Lane, St. Mary Cray

Kent BR5 3LJ, UK

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Cost is £15 plus £7 postage.

Olbrich Botanical Gardens

Lynn Jacobson ~ Madison, WI

Olbrich Botanical Gardens features 16-acres of outdoor gardens and a year-round tropical Conservatory on the shores of Lake Monona in Madison, Wisconsin. Formal gardens include Sunken, Herb, Perennial, Wildflower, and Shade Gardens. The Thai Pavilion and garden; a gift from the Thai Government and the Thai Chapter of the Wisconsin Alumni Association to the University of Wisconsin-Madison, opened in 2002. In 2005, the Rose Garden, featuring Midwest-hardy roses, opened to the public along with a two-story, limestone Rose Tower. Olbrich Botanical Gardens was chosen in 2005 for the national Award for Garden Excellence from the American Association of Botanical Gardens and Arboreta. Olbrich is funded by a unique public/private partnership between the City of Madison and the nonprofit Olbrich Botanical Society. Its dedicated staff and army of volunteers continue to develop sustainable landscapes such as meadow, gravel, and rain gardens throughout Olbrich.

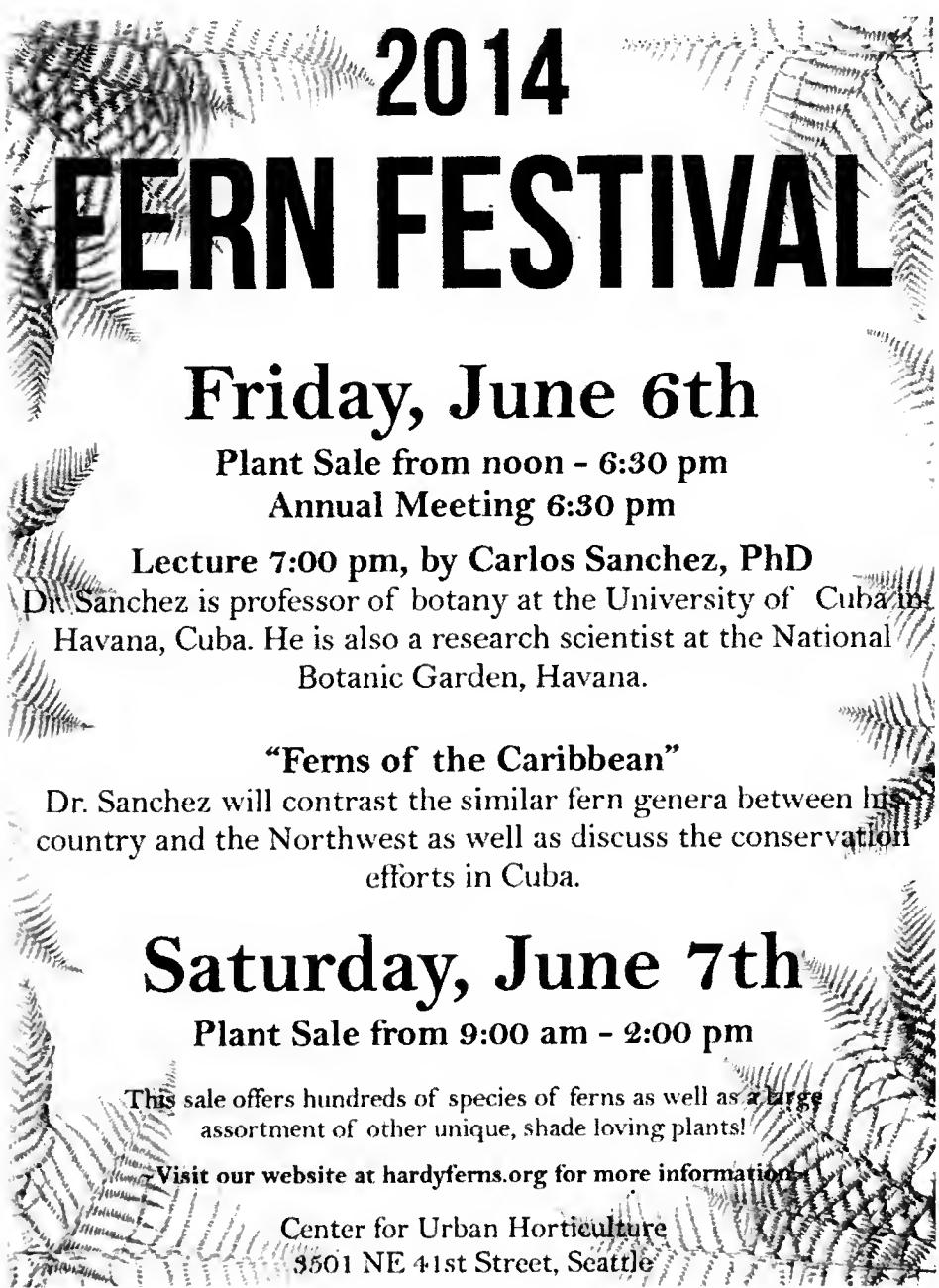
In the outdoor gardens, a large sculpture called "Fiddleheads" sits against a backdrop of mature arborvitaes. (*See photo page 27*) The sculpture, by former Middleton, Wisconsin

artist Sylvia U. Beckman, took three years to complete. The artist carved the details of the sculpture with a chisel and air hammer. It honors fern fiddleheads – the emerging shoots of a fern. “Fiddleheads” was commissioned in July 1985 and dedicated June 5, 1988. The sculpture is Dubuque limestone and the foundation is concrete. It measures approximately 12 feet high by 5 feet in diameter. The foundation is 8 inches high by 4 feet by 4.5 feet. It was fabricated by Mittler Monuments of Madison. Ms. Beckman was an avid gardener and painter.

A description of the sculpture from *A Common Joy* by Frances W. Hurst is as follows: “The sculpture was funded by the Wisconsin Arts Board, the Madison Committee for the Arts, Olbrich Botanical Society, and People for Parks... According to the artist, “the stems of the fiddleheads are placed in a design that creates a space where children can explore.”

Other works at Olbrich Botanical Gardens by Ms. Beckman include “Spring” and “Hosta Leaf.”

Visit our website~ www.hardyferns.org to find out more!



**2014
FERN FESTIVAL**

Friday, June 6th
Plant Sale from noon - 6:30 pm
Annual Meeting 6:30 pm
Lecture 7:00 pm, by Carlos Sanchez, PhD
Dr. Sanchez is professor of botany at the University of Cuba in Havana, Cuba. He is also a research scientist at the National Botanic Garden, Havana.

“Ferns of the Caribbean”
Dr. Sanchez will contrast the similar fern genera between his country and the Northwest as well as discuss the conservation efforts in Cuba.

Saturday, June 7th
Plant Sale from 9:00 am - 2:00 pm
This sale offers hundreds of species of ferns as well as a large assortment of other unique, shade loving plants!
Visit our website at hardyferns.org for more information.
Center for Urban Horticulture
3501 NE 41st Street, Seattle

**UPCOMING
EVENTS**

APRIL 17TH - THE SPRING EPHEMERALS AT THE MILLER GARDEN

JUNE 6TH - 7TH - HFF FERN FESTIVAL AT THE CENTER FOR URBAN HORTICULTURE

JUNE 18TH - FERNS OF THE MILLER GARDEN AT THE MILLER GARDEN

SUMMER HIKE - MORE INFO TO FOLLOW, VISIT OUR WEBSITE

OCTOBER 9TH - PLANTS FOR THE AUTUMN GARDEN AT THE MILLER GARDEN

OCTOBER 25TH - FERN DAY AT THE RHODODENDRON SPECIES BOTANICAL GARDEN

FALL SOCIAL AND 25TH ANNIVERSARY CELEBRATION AT THE BELLEVUE BOTANICAL GARDEN - MORE INFO TO FOLLOW, VISIT OUR WEBSITE

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Bulletin #4198 ~ Facts on Fiddleheads

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By Food Safety Specialist Jason Bolton, Ph.D., Food Science Professor Alfred Bushway Ph.D., and Extension Professional David Fuller. Originally developed by Extension Professor Mahmoud El-Begearmi.

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Fiddleheads, an early spring delicacy throughout their range, are the young coiled fronds of the ostrich fern (*Matteuccia struthiopteris*). Nearly all ferns have fiddleheads, but those of the ostrich fern are unlike any other. Ostrich fern fiddleheads, which are about an inch in diameter, can be identified by the brown papery scale-like covering on the uncoiled fern, as well as the smooth fern stem, and the deep "U"-shaped groove on the inside of the fern stem. Look for ostrich ferns emerging in clusters of about three to twelve fiddleheads each on the banks of rivers, streams, and brooks in late April, May, and early June. Make sure that you have landowner permission before harvesting fiddleheads.

Potential Foodborne Illness

In 1994 there was a large outbreak of foodborne illness that the Center for Disease Control (CDC) determined was a result of eating raw or undercooked fiddleheads. Since then there have been several reported cases of foodborne illness related to fiddlehead consumption. Researchers have yet to determine what the origins of the illness are but, they do know that proper handling and cooking helps reduce your risk of foodborne illness related to the consumption of fiddleheads. Under no conditions should fiddleheads be consumed raw.

Symptoms of Illness From Eating Improperly Cooked Fiddleheads

Health Canada and the CDC both have investigated a number of outbreaks of foodborne illness associated with the consumption of raw or lightly cooked fiddleheads. The described symptoms of this foodborne illness were diarrhea, nausea, vomiting, abdominal cramps and headaches. These symptoms generally occur within 30 minutes to 12 hours after eating raw or undercooked fiddleheads. This foodborne illness typically lasts less than 24 hours, but it was found that some cases could last up to three days.

If you experience symptoms after eating fiddleheads, you should seek the advice of a health care professional and contact your local public health unit to report this illness.

Harvesting Fiddleheads

Harvest the tender little rolls of ostrich fern as soon as they are an inch or two above the ground. Carefully brush off and remove the papery brown scales. Before harvesting in the wild make sure that you can properly differentiate the ostrich fern fiddleheads from other fern fiddleheads. Not all ferns are edible; in fact bracken ferns are carcinogenic and should not be consumed. (See Bulletin #2540, Ostrich Fern Fiddleheads for more information.)

Cleaning Fiddleheads

Fiddleheads can be cleaned by first placing them in a colander and thoroughly rinse/

spray them off with clean cold potable water. Placing the rinsed fiddlehead in a bowl full of clean cool potable water should follow rinsing to remove the remainder of the brown papery coverings, and repeat as needed. They should appear clean at this point.

Short-term Storage

Remember to keep fiddleheads refrigerated until you are ready to cook or preserve them. They can be stored in the refrigerator for up to two weeks.

Cooking Fiddleheads

Fiddleheads can be safely cooked using two different methods, boiling and steaming. Boiling: Bring lightly salted water in a pot to a rolling boil and add washed fiddleheads. The water should fully cover fiddleheads when added. Bring the water back to a steady boil and hold for 15 minutes.

Steaming: Bring a small amount of water to a boil preferably in steam apparatus. Add washed clean fiddleheads and steam for 10-12 minutes. Serve at once with optional melted butter and/or vinegar. The sooner they are eaten, the more delicate their flavor. They may be served, like asparagus, on toast. Cooked, chilled fiddleheads can be also served as a salad with an onion and vinegar dressing.

Sautéing, stir-frying or microwaving ostrich fern fiddleheads are NOT recommended methods for cooking fiddleheads. Fiddleheads should be boiled or steamed prior to use in recipes which use further cooking methods like sautéing, stir-frying or baking.

Source: Food Safety Tips for Fiddleheads, Health Canada.

Preservation (Freezing Fiddleheads)

Due to the short season for fiddleheads, some people like to preserve them for later use. Freezing is the most common and safest way to preserve fiddleheads. To freeze fiddleheads make sure to follow these steps: Clean them based on the steps outlined above. Blanch a small amount of fiddleheads at a time for two minutes in 4-6 cups of water. As a reminder the blanch time starts when the water comes to a rolling boil after adding the produce. Cool in an ice bath immediately after blanching (half ice water mixture). Dry thoroughly and place into moisture and vapor proof containers such as resealable plastic bags. Do not over fill bags. Place container in freezer. To use frozen fiddleheads thaw in refrigerator or cold water and follow cooking direction outlined above before serving. Fiddleheads can be thawed in a microwave if for immediate consumption.

Canning

Because process times have not been established and tested for home-preserved fiddleheads, UM Cooperative Extension does not recommend pressure canning as a method to preserve fiddleheads.

Many consumers are interested in pickling fiddleheads. In cooperation with the Department of Food Science and Human Nutrition at the University of Maine, UMaine Extension staff have tested some pickling recipes for fiddleheads. The most successful of these in terms of flavor, keeping quality, and safety are included in this fact sheet.

To pickle fiddleheads, pour enough cider vinegar over the fiddleheads to cover, and then strain it off into a pan. Add 1 cup sugar for every gallon of vinegar. Add a 1/8 teaspoon each of pepper, ground nutmeg, cinnamon, allspice and celery seed. For a little heat, you may add red pepper flakes. Boil this syrup for 7-8 minutes; then pour over the fiddleheads in pint-sized jars. Seal and process for 10 minutes in a boiling water process canner.

Special Note: *Our tests showed that the pH of these pickled fiddleheads ranged between 3.35–3.74 (liquid) and 3.38–3.78 (solids). This is important to ensure microbiological food safety. It is also important that you follow Good Manufacturing Practices (GMPs) to assure the safety and quality of the pickled fiddleheads, including sanitation and sterilization of jars and lids. All fiddlehead products should be hot-packed and processed for 10 minutes in a hot water bath.*

Fiddlehead Nutrition

Contains: Fiber, vitamin C, vitamin A, and omega-3 fatty acids (DeLong, 2011; Bushway 1982) Sources: DeLong, J; Hodges, D; Prange, R; Forney, C; Toivenon, P; Bishop, M; Elliot, M; Jordan, M. The unique fatty acid and antioxidant composition of ostrich fern (*Matteuccia struthiopteris*) fiddleheads. Can. J. Plant Sci. (2011) 91: 919-930. Bushway, A; Wilson, A; McGann, D; Bushway, R. The Nutrient Composition of Fresh Fiddlehead Greens. 47 (1982) J. of Food Science.

Shrimp and Fiddlehead Medley

Bon appétit!

1 pound fiddleheads
6 ounces linguine, uncooked
6 cups water
1-3/4 pounds Maine shrimp, fresh or frozen
1 teaspoon margarine
2/3 cup onion, chopped
1/2 cup green pepper, diced
1/2 pound fresh mushrooms, sliced
1 teaspoon thyme
1/4 teaspoon pepper
1/8 teaspoon salt
1/8 teaspoon celery seed
2 tablespoons lemon juice



Cut off ends of fiddleheads. Remove scales and wash thoroughly. Bring water to a boil in a large saucepan; add shrimp and cook three to five minutes, or until done. Drain well, and set aside. Cook fiddleheads in boiling water for 15 minutes. Drain. Coat a large, nonstick skillet with cooking spray; add margarine. Heat until margarine melts. Add onion and green pepper and sauté until crisp-tender. Stir in fiddleheads. Meanwhile, cook pasta as directed, without salt or oil. Drain well, set aside and keep warm. Add sliced mushrooms, thyme, pepper, salt and celery seeds to vegetable mixture; stir well. Cook, uncovered, over medium heat three to four minutes or until mushrooms are tender, stirring often. Stir in shrimp and lemon juice; cook until heated through, stirring often. Place pasta on a large platter. Spoon shrimp mixture on top. Serve immediately. Serves 6.

Fiddlehead Dijon

1-1/2 pounds fresh fiddleheads
1 tablespoon cornstarch
1 cup nonfat buttermilk
2 teaspoons Dijon mustard

3/4 teaspoon lemon juice

1/2 teaspoon dried tarragon

1/4 teaspoon pepper

Clean and prepare fiddleheads. Remove scales and wash thoroughly. Place fiddleheads in a vegetable steamer over boiling water. Cover and steam 20 minutes or until tender, but still crisp. Set aside, and keep warm. Combine cornstarch and buttermilk in a small saucepan; stir well. Cook over medium heat until thickened and bubbly, stirring constantly. Remove from heat; stir in mustard, lemon juice, tarragon and pepper. Arrange fiddleheads on a serving platter. Spoon sauce over fiddleheads. Serve immediately. Makes 6 servings.

Plain and Pickled Fiddleheads

cider vinegar

sugar

1/8 teaspoon each of pepper, ground nutmeg, cinnamon, allspice and celery seed

Pour enough vinegar over the fiddleheads to cover; then strain it off into a pan. Add 1 cup sugar for every gallon of vinegar. Add a large pinch of each of the spices and celery seed. Boil this syrup for 7-8 minutes; then pour over the fiddleheads in pint-sized jars. Seal and process for 15 minutes in a boiling water process canner.

Sweet Pickled Fiddleheads

1 quart cider vinegar

5 cups sugar

2 teaspoons salt

Mix vinegar, sugar and salt in saucepan; bring to a boil, pour over fiddleheads in pint-sized jars; seal; process 15 minutes in boiling water process canner. Makes 6 pints.

Sugar-Free Fiddlehead Pickles

1 gallon vinegar

1 teaspoon powdered saccharin (if desired)

1 teaspoon powdered alum

1/2 cup salt

1/2 teaspoon powdered cloves

1 teaspoon powdered allspice

1 tablespoon powdered cinnamon

1/2 cup dry mustard

Pack fiddleheads into jars; pour enough liquid to cover fiddleheads; seal at once. Process for 15 minutes in boiling water bath. Let stand at least two weeks before using. If the product is to be sold, it may be necessary to check with the Food and Drug Administration on the use of saccharin in this type of product.

Mustard Fiddlehead Pickles

1 quart button onions (peeled)

1 quart fiddleheads

2 cups salt

4 quarts water

1 cup flour
6 tablespoons dry mustard
2 cups sugar
2 quarts vinegar

Wash and prepare button onions and fiddleheads. Mix salt and water. Pour over fiddleheads. Let stand overnight. Bring to boil, and drain in colander. Mix flour and dry mustard. Stir in enough vinegar to make smooth paste. Add sugar and vinegar. Boil until thick and smooth, stir constantly. Add the fiddleheads and cook until they are just heated through. (Overcooking makes them soft instead of crisp.) Pour into jars and seal immediately. Process 15 minutes in boiling water process canner. Makes 8 pints.

Quick Sour Fiddlehead Pickles

1/2 gallon cider vinegar
2 cups water
1/2 cup salt
1/2 cup sugar
1/2 cup mustard seed

Mix ingredients, bring to boil. Pour over fiddleheads in pint-sized jars; seal; process 15 minutes in boiling water process canner.

Bread and Butter Fiddlehead Pickles

4 pounds fiddleheads
3 large onions, thinly sliced
1/2 cup salt
cold water
3 trays ice cubes
5 cups sugar
5 cups cider vinegar
1 1/2 teaspoons turmeric
1 1/2 teaspoons celery seeds
1 1/2 teaspoons mustard seeds

In 8-quart enamel, stainless steel or glass container, stir fiddleheads, onions, salt and enough cold water to cover fiddleheads until salt dissolves; stir in ice. Cover; let stand in cool place 3 hours. Drain fiddleheads and rinse with cold running water; drain thoroughly. Measure sugar, vinegar, turmeric, celery seeds and mustard seeds into 8-quart Dutch oven or heavy saucepan. Over high heat, heat to boiling. Reduce heat to low; simmer, uncovered 30 minutes, stirring often. Meanwhile, prepare jars and caps. Add fiddleheads and onions to Dutch oven; heat to boiling. Spoon hot fiddleheads into hot jars to 1/4 inch from the top. Immediately ladle syrup over fiddleheads. Process 15 minutes in boiling water process canner. Cool jars and test for air tightness. Makes about 6 pints.

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